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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/680,303

10/08/2003

Osamu Takagi

016887-1100

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22428

7590

08/03/2006

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EXAMINER

LEUNG, PHILIP H

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/680,303

Applicant(s)

TAKAGI ET AL.

Examiner

Philip H. Leung

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3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 34 and 45-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 is/are allowed.
- 6) ☒ Claim(s) 45, 46 and 49-52 is/are rejected.
- 7) ☒ Claim(s) 47 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

1. The Office action mailed on 7-3-2006 has been supplemented as follows to correct minor errors in claim numbers. Any inconvenience this may have caused is sincerely regretted.

2. The indicated allowability of claims 45, 46 and 49-52 is withdrawn in view of the newly discovered reference(s) to Morigami (JP 10-074001) together with the comments in the Japanese Office action cited by the applicant. Rejections based on the newly cited reference(s) follow.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 45, 46, 49, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al (US 5,752,150), in view of Asada (JP 3-90200) (both previously cited) and Morigami (JP 10-074001) (newly cited by the applicant).

Kato shows in Figures 2 and 9-12, a fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil 3, 22, which is arranged so as to be close to an endless member 5 having a metal layer of a conductive material (see col. 11, lines 32-45), to cause said endless member to generate heat to heat a member to be fixed, wherein said coil has a plurality of unit wires 301-304 (Figures 16-18), formed of litz wires that

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are individually insulated, col. 11, lines 9-12 and it also includes an insulating member 39 for covering the coil 22 and the holder to isolate the coil from the heating member 5 (see Figures 28-31 and col. 18, line 14 – col. 20, line 13). It states that the insulating member 39 may be a coating (col. 19, lines 9-14). Kato does not explicitly state that the induction coil comprises a litz wire that includes a plurality of single wires and a second heat resin layer coated on a surface of the coil unit with the second resin layer bonds and fixes the single wires with the core together. Asada shows an induction heating device with an induction heating coil formed of a litz wire 32, intertwined with a plurality of enamel insulated wires and a waterproof insulation coating 36 on the outside of the litz wires (see Figure 2 and the English abstract). Morigami shows an induction heating image fixing device including a roller endless member having a metal layer (Refer to "metal sleeve 17" and Paragraph [0043]) of a conductive material, to cause said endless member to generate heat to heat a member to be fixed; wherein said electromagnetic induction coil is wound onto a non-magnetic material core coated either with a resin or paint (Refer to Figure 4, Paragraphs [0067] and [0071]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kato to use an insulating coating on the litz wires and to provide more coating of resin layers on the coil and core for better insulation and waterproofing of the coil to prevent breakdown, in view of the combined teaching of Asada and Morigami. The exact coating material would have been a matter of engineering expediency once it is taught to use a resin coating such as polyamide by Morigami and can be determined through routine experimentation depending on the operation conditions and requirements such as the heating temperature.

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5. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al (US 5,752,150), in view of Asada (JP 3-90200) and Morigami (JP 10-074001), as applied to claims 45, 46, 49, 51 and 52 above, and further in view of Netzer (US 2,888,541) (previously cited).

Kato combined with Asada and Morigami shows every feature and structure except for the explicit showing how the induction coil and the core are bonded. Netzer shows that it is notoriously old and well known in the art of induction heating coil assembly to form a coil winding with a multiple strand conductor of induction heating devices to use an adhesive (such as a resinous composition) with mica powders to bind and insulate the coil turns and core together (see Figures 1 and 2, col. 1, lines 39-59 and col. 4, line 61 – col. 5, line 21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kato combined with Asada and Morigami to use an adhesive with mica powders for bonding the coil turns and the core together for better insulation and heat protection, in view of the teaching of Netzer (see col. 6, lines 42-75).

6. Claim 34 is allowed.


7. Claim 47 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571)-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Philip H Leung  
Primary Examiner  
Art Unit 3742

PLeung/pl  
7-13-2006